

WE CLAIM:

1. A hematology control composition comprising:

- a) a reticulocyte component;
 - b) a white blood cell component;
 - 5 c) a red blood cell component;
 - d) a nucleated red blood cell component;
 - e) a platelet component; and
 - f) a reticulated platelet component,
- mixed in an isotonic suspension medium.

10 2. The control composition of Claim 1, wherein the reticulocyte component comprises reticulocytes or an analog thereof.

15 3. The control composition of Claim 2, wherein the reticulocyte component comprises reticulocytes prepared by human red blood cell encapsulation •

4. The control composition of claim 2, wherein the reticulocyte component comprises reticulocytes prepared by isolation from whole blood.

20 5. The control composition of Claim 1, wherein the white blood cell component comprises a member selected from the group consisting of white blood cells for cellular types, white blood cells for all phenotypes and mixtures thereof.

25 6. The control composition of Claim 5, wherein the white blood cell component comprises a member selected from the group consisting of white blood cells that are stabilized with glutaraldehyde; with glutaraldehyde and formaldehyde; or with 20% NuoSept 145.

7. The control composition of Claim 5, wherein the white blood cells for cellular types comprise:

- a) lymphocytes;
- b) monocytes;
- 5 c) neutrophils;
- d) eosinophils; and
- e) basophils.

10 8. The control composition of Claim 1, wherein the red blood cell component comprises human red blood cells.

9. The control composition of Claim 1, wherein the nucleated red blood cell component comprises nucleated avian red blood cells.

15 10. The control composition of Claim 9, wherein the nucleated avian red blood cells comprise turkey red blood cells.

20 11. The control composition of Claim 1, wherein the platelet component comprises simulated platelets.

12. The control composition of Claim 11, wherein the simulated platelets comprise goat red blood cells.

25 13. The control composition of Claim 1, wherein the platelet component comprises human platelets.

14. The control composition of Claim 1, wherein the reticulated platelet component comprises goat red blood cells.

15. A method of using the control composition of Claim 1 to determine the accuracy and reproducibility of the operation of a multiparameter automated hematology instrument comprising the steps of:

- a) providing the hematology control composition of Claim 1 with a known reference value for each component type;
- b) providing a multi-parameter automated hematology instrument;
- c) counting the population number per component type in the hematology control composition with the multi-parameter automated hematology instrument; and
- d) comparing the population number per component type obtained from step c) above with the known reference value for each component type.

16. A method of using the control composition of Claim 1 in the analysis of whole blood comprising the steps of:

- a) providing the hematology control composition of Claim 1 with a known reference value for each component type;
- b) providing a multi-parameter automated hematology instrument;
- c) providing one or more samples of whole blood;
- d) counting the population number per component type in the hematology control composition with the multi-parameter automated hematology instrument;
- e) counting the population number per component type in the whole blood sample with the multi-parameter automated hematology instrument; and
- f) comparing the population number per component in the hematology control composition obtained from step d) above with the population number per component in the whole blood sample obtained from step e) above.

17. The methods of Claim 15 or 16, including means to collect, monitor, store, compare, and analyze data generated from the comparison of such control composition or test samples.

5 18. A method of making a hematology control composition for use with multi-parameter hematology measuring systems, comprising the step of mixing a reticulocyte component, a white blood cell component, a red blood cell component, a nucleated red blood cell component, a platelet component and a reticulated platelet component in an isotonic suspension medium.

10 19. The method of Claim 18, wherein the reticulocyte component comprises reticulocytes or an analog thereof.

15 20. The method of Claim 18, wherein the white blood cell component comprises a member selected from the group consisting of white blood cells for cellular types, white blood cells for all phenotypes and mixtures thereof.

20 21. The method of Claim 20, wherein the white blood cells for cellular types comprise:

- 20 a) lymphocytes;
- b) monocytes;
- c) neutrophils;
- d) eosinophils; and
- e) basophils.

25 22. The method of Claim 18, wherein the red blood cell component comprises human red blood cells.

30 23. The method of Claim 18, wherein the nucleated red blood cell component comprises nucleated avian red blood cells.

24. The method of Claim 23, wherein the nucleated avian red blood cells comprise turkey red blood cells.

5 25. The method of Claim 18, wherein the platelet component comprises simulated platelets.

26. The method of Claim 25, wherein the simulated platelets comprise goat red blood cells.

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27. The method of Claim 18, wherein the reticulated platelet component comprises goat red blood cells.

28. A system for measuring components of blood, comprising:

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- (a) an automated test instrument, and
- (b) a control for use in said test instrument, said control comprising:

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- 1. an isotonic suspension medium;
- 2. a component selected from the group consisting of a reticulocyte component; a white blood cell component; a red blood cell component; a nucleated red blood cell component; a platelet component; a reticulated platelet component and mixtures thereof; and
- 3. a reticulocyte component.

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29. The system of Claim 28, further comprising a device for visually displaying the results of a test using said system.

30. The system of Claim 28 or 29, further comprising of a bar code scanner.

31. A hematology control comprising:

- a. an isotonic suspension medium;
- b. a component selected from the group consisting of a reticulocyte component; a white blood cell component; a red blood cell component; a nucleated red blood cell component; a platelet component; a reticulated platelet component and mixtures thereof; and
- c. a reticulocyte component.

32. A method for testing blood, comprising;

- a. analyzing a hematology control, said control comprising an isotonic suspension medium; a component selected from the group consisting of a reticulocyte component; a white blood cell component; a red blood cell component; a nucleated red blood cell component; a platelet component; a reticulated platelet component and mixtures thereof; and
- b. providing output for said analysis.

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